

STAT

A REPORT
on
Krosno Dam

Prepared by
Project Treasure Island
for
Directorate of Intelligence, USAF
1954

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K R O S N O D A M (P O L A N D)

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Krosno Dam in Poland

This report contains information on the Krosno Dam on the Bobr River which serves for the production of power, and for control of floods and navigation on the Odra (Oder) River. The report is the result of a study of German and Polish open sources published between 1934 and 1952, and listed in the attached bibliography.

The information was compiled according to the P.V.D. questionnaire as follows:

I. FunctionsA. The system of which the dam forms a part

In order to utilize the water power resources of the Bobr (Bober) River and to improve shipping on the Odra (Oder) River --- of which the Bobr River is a tributary --- several dams were built on the Bobr River and its tributary the Kwisa (Queis) River. The Dychow Power Development on the Bobr River is described in a separate report. The Krosno Dam and Power Plant is downstream from the Dychow Plant. The tailwater of the Dychow Power Plant forms the reservoir of the Krosno Power Plant (see Figs. 1, 2 and 3).

B. The dam within the system

The dam at Krosno (Fig. 4) creates a reservoir (Fig. 3) which serves the power plant at Krosno and also is used as a tail-

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water pond for the pumped storage plant at Dychow. It helps regulate the water supply of the Odra River.

- C. Highways and/or railways resting on the dam or adjacent thereto
As seen in Figs. 1 and 3, a railroad bridge, servicing the line Krosno-Lubske is located 700 m below the dam. For roads in the vicinity of the dam see Fig. 3.

- D. Navigation locks in connection with dam
There is no navigation lock.

II. Location and designation

- A. Data which will make possible pin-pointing the installation

The Krosno Dam is located near the town of Krosno in Wojewodztwo Zielonogorskie, Ziemia Lubuska, and is 2.75 km upstream from the mouth of the Bobr River and 700 m upstream from the railroad bridge Krosno-Lubske (see Fig. 3).

- B. Official, local, and popular names of dams and dependent installations

The dam is called Krosno Dam (German: Krossen Wehr) and is part of the installation known as "Bobrowa Gora" (or Bokerkraftwerk).

III. Dimensions

A. Dam

1. Maximum and minimum head on dam

Maximum: 5.50 m.

Minimum: 2.75 m.

2. Maximum and minimum depth of water below dam

See Fig. 5.

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3. Total height of dam above river bed and above foundations

See Fig. 5.

4. Elevation of bottom of penstocks at dam

There are no penstocks.

5. Total thickness at base and at high water level

See Fig. 5.

6. Slopes of dam faces

See Fig. 5.

7. Length at crown, across river bed and along spillway

See Figs. 5 and 6.

E. Reservoir1. Capacity

When the water surface reaches an elevation of 43.45 m
it is 4,000,000 cu m.

2. Area

No information available.

3. Length, width and depth (including profiles)

See Figs. 1, 2, 3 and 5.

4. Detailed plan in vicinity of dam

See Figs. 3 and 4.

G. Navigation locks in connection with dams (structural details)

There is no navigation lock.

IV. Hydrological data (rainfall, flow, etc.)

The Bobr River has its source in the Giant Mountains, flows north
and joins the Odra River at Krosno. Heavy rains in the mountains

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and nonporous foundation in the upper reaches account for the Alpine character of the Bobr River. In its lower reaches (about 44.5 km long) the Bobr River has a fall of 33 m.

Medium flow	45 cu m/sec.
Min. flow	13 cu m/sec.
Max. flow	1,500 cu m/sec.

The dam is designed for a 1,500 cu m/sec. flow.

V. Foundation conditions and soil characteristics under and near the dam

Foundation under the dam is gravel and sand.

VI. Design data

A. Structural type or types

The Krosno Dam is a movable dam with 2 gates as seen in Figs. 4 and 5.

B. Material used

Concrete and steel.

C. Design criteria

No information available.

D. Details and equipment

Gates

There are 2 rolling gates (see Figs. 5 and 7), each 35.5 m wide, and 5.75 m high. Another, smaller gate, serving for emergency purposes is placed between the 2 gates. It is 5 m wide, 5.75 m high. There is a splashboard 1 m high. The gates can be operated electrically and by hand.

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Bridge

There is a foot bridge connecting the piers of the dam, as seen in Fig. 5.

VII. Special data on power dams

A. Capacity (Kva) present and proposed

2,650 kw (1938).

B. Output (Kwh/yr achieved and proposed)

No information available.

C. Powerhouse

1. Location

The powerhouse adjoins the dam at the left (see Figs. 4 and 6).

2. Structure

See Figs. 4 and 6.

3. Installations

Turbines

There are 2 Kaplan turbines, each 1,200 hp, 115 rpm.

They are designed for a 4.80 m head and rated for a flow of 36.4 cu m/sec. Due to the difference in rpm, a gear is used for coupling the turbines to the generators.

Generators

The generators are for 1,325 kw, 10.5 kv and 750 rpm.

Racks

A rack 21 m long, 6.50 m wide is in front of the turbines.

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Stoplogs

There are no sluice gates, only stoplogs 2 by 4 m and 4.50 m high. The height of the water is 7 m.

4. Number, dimensions, location and type of penstocks

There are no penstocks.

D. Places of installations served; ties with power grids

No information available.

E. Location and description of transformer yards and transmission system

The Krosno Plant is connected with the Dychow Plant on 10-kv buses. It feeds the 15-kv net directly via 10/15-kv transformers.

VIII. Historical dataA. Name and background of the designer

Siemens-Schuckertswerke.

B. Dates of construction

1933 to 1936.

C. Source of materials

No information available.

D. Records of war damage, failures, removal of equipment, etc.

See report on Dychow Dam.

E. Data on conditions of structure at any date

No information available.

F. Proposals for enlargement, alteration or extension of function

No information available.

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IX. Graphical material

A. Photos, especially those taken during construction

Photographs attached to this report are shown on Figs. 4 and 7.

B. Working drawings, general and detailed

Not available.

C. Record and publication drawings

Drawings attached to this report are shown on Figs. 1, 2, 3, 5 and 6.

D. Sketches by persons who have seen installation

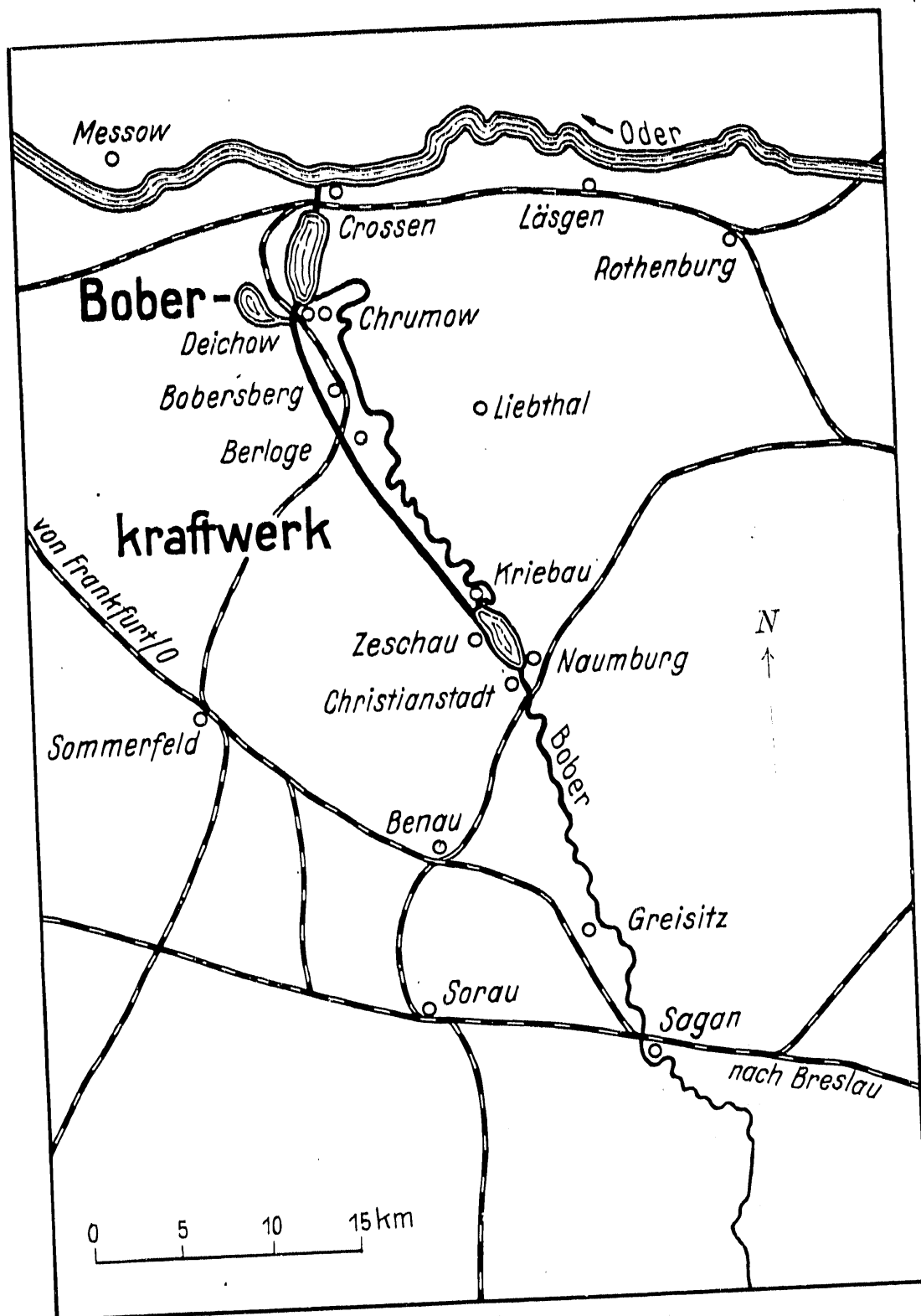
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Krosno

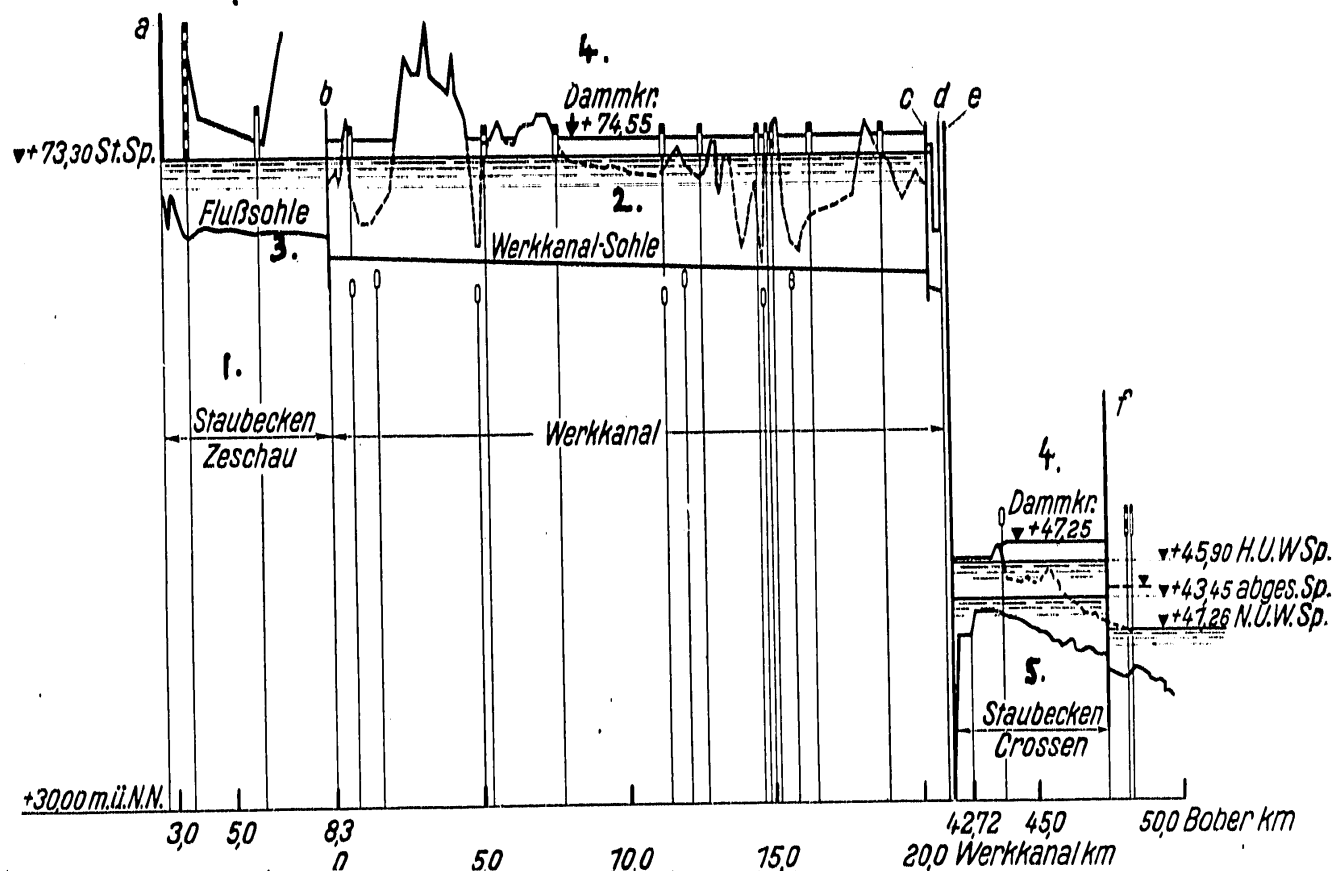
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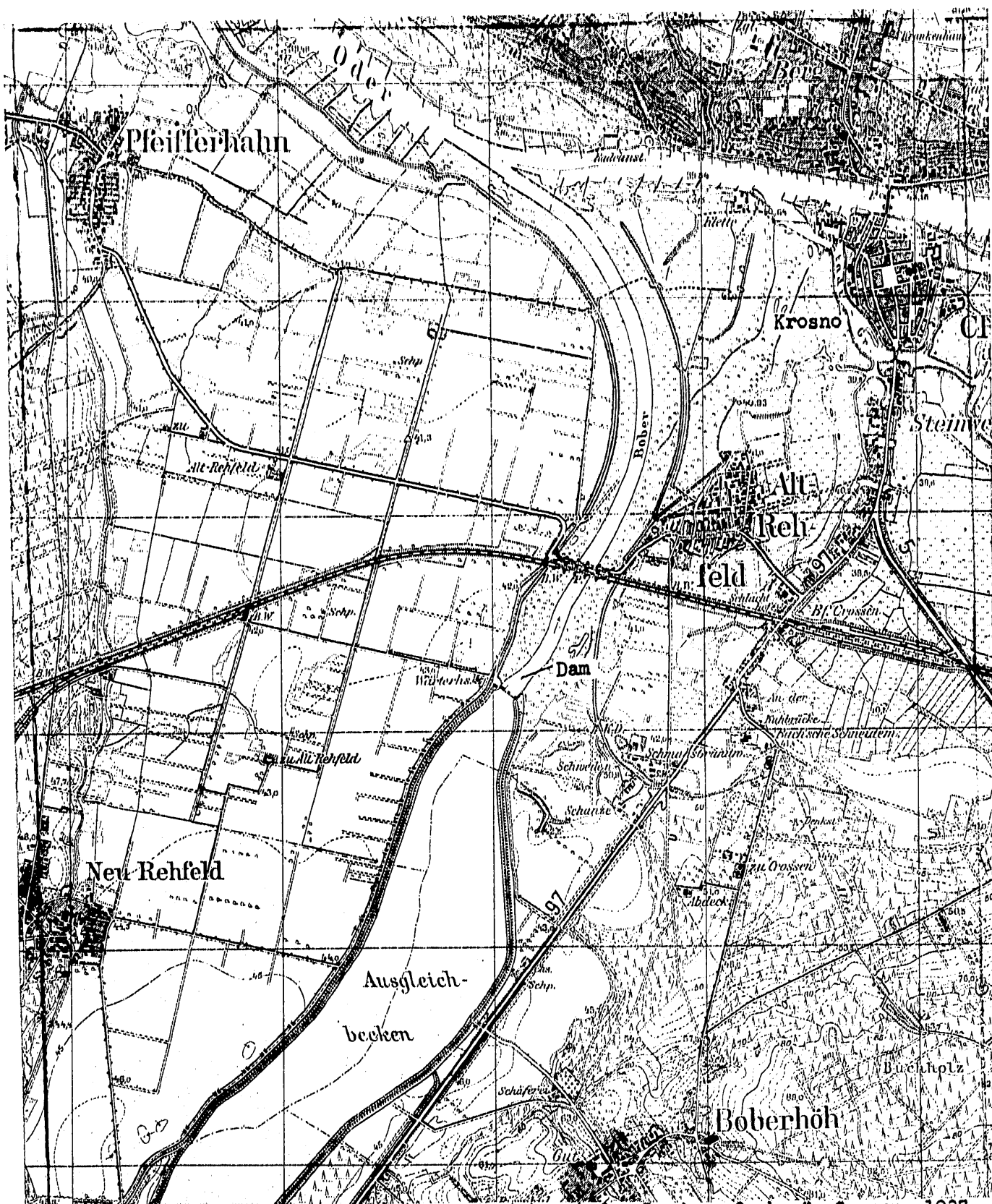
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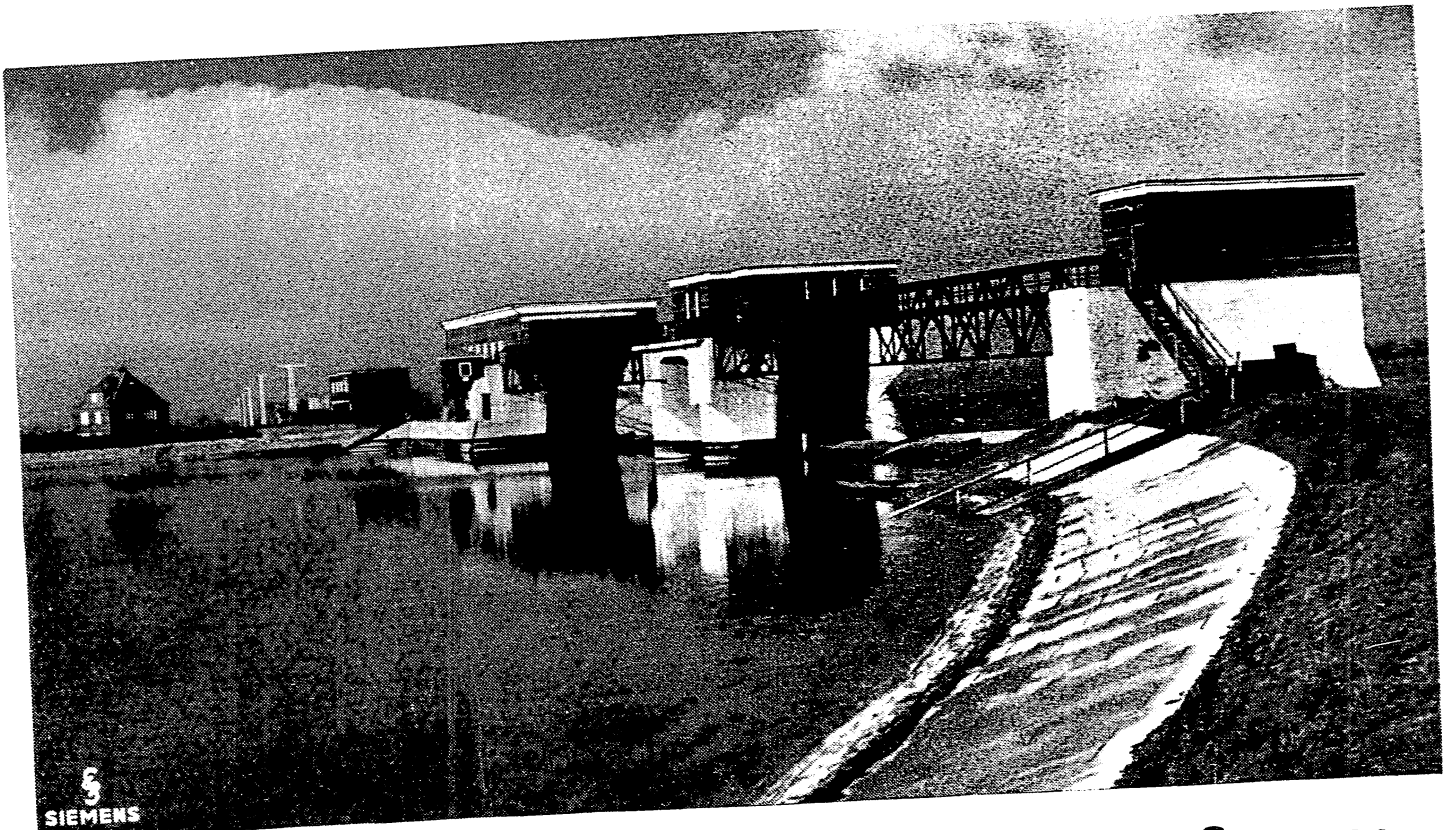
DYCHOW and KROSNO DAMS, Poland. Plan.
 Source: Zentralblatt der Bauverwaltung,
 Berlin, 1937, p. 1170



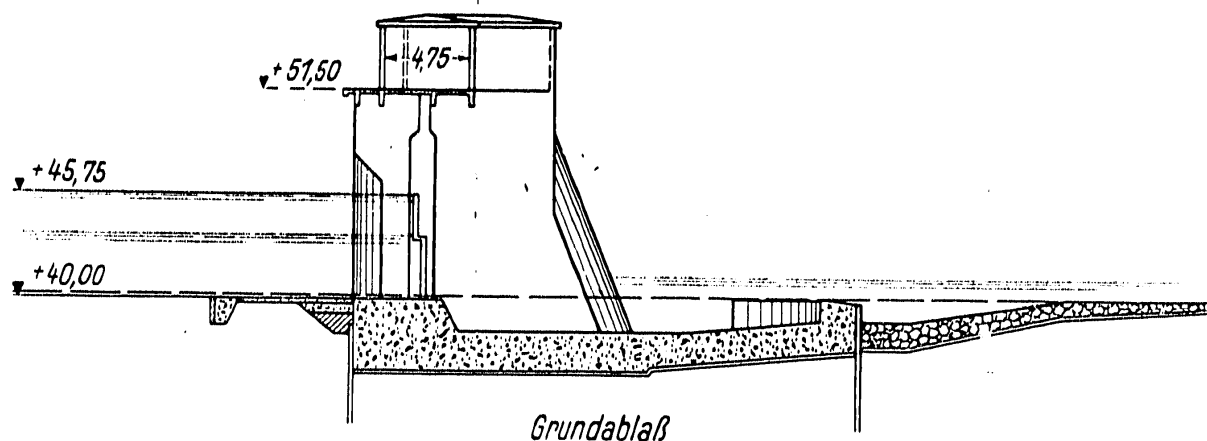
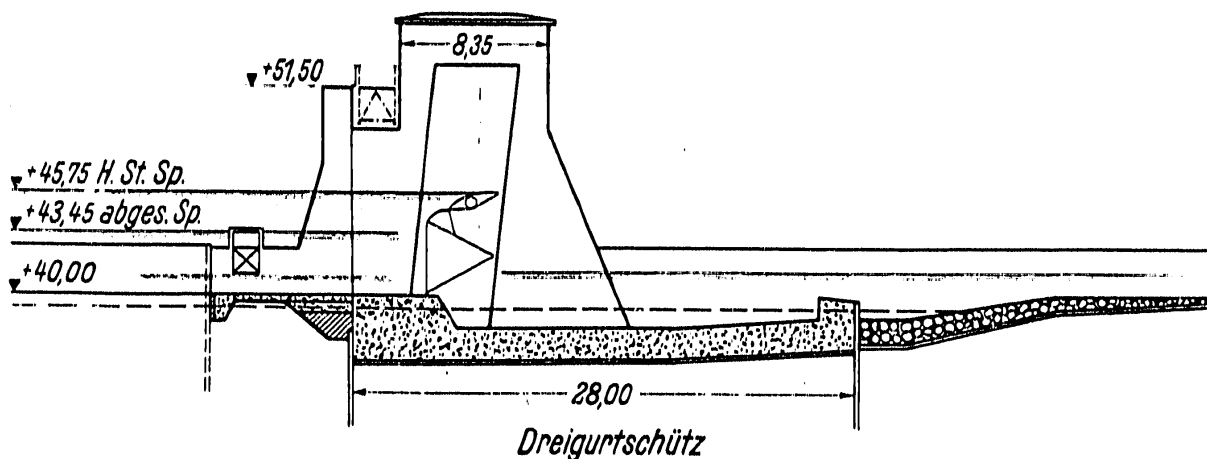
DYCHOW and KROSNO DAM, Poland. Profile of Reservoirs and Supply Canal. a)Krzystkovice b)Krzywaniec Dam c)Canal Outlet d)Pondage Reservoir e)Dychow Powerhouse f)Krosno Dam and Powerhouse 1)Zeschau Reservoir 2)Canal bed 3)River Bed 4)Crest of Dam 5)Krosno Reservoir. Source: Elektrotechnische Zeitschrift, Berlin, 1936, p. 699



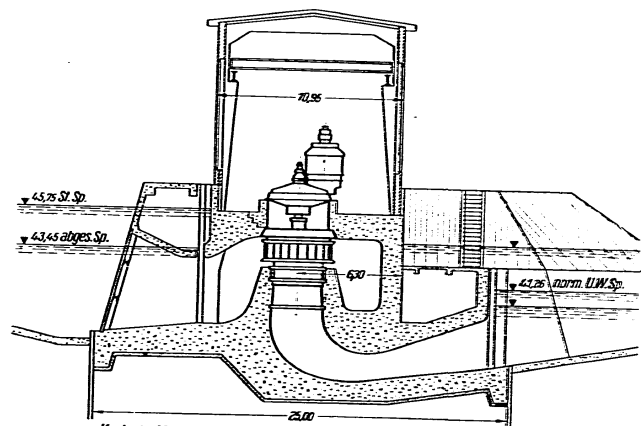
KROSNO DAM, Poland. Map published by "Reichsamt für Landesaufnahme", Germany 1937, Sheet # 3956, Crossen. Scale 1:25,000



KROSNO DAM, Poland. Dam and Powerhouse. Source:
Siemens Zeitschrift, Berlin, 1938, p. 527



KROSNO DAM, Poland. Cross-Section
of Gates. Source: Siemens Zeit-
schrift, Berlin, 1937, p. 1178



Kaplan turbine 715 U/min:
 $H_{\text{max}} = 4.8 \text{ m}$; $Q = 37.10 \text{ m}^3/\text{s}$; $N = 2000 \text{ PS}$

Synchron-Generator mit Getriebe:
 1650 kVA, 10.5 MV, 750 U/min, $\cos \phi = 0.8$

Cross-Section of Powerhouse

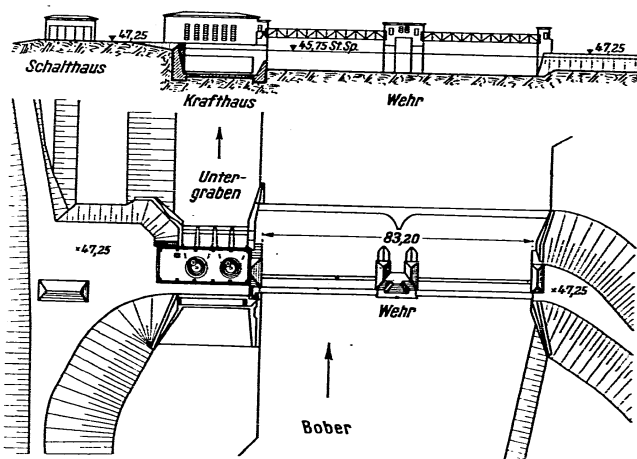
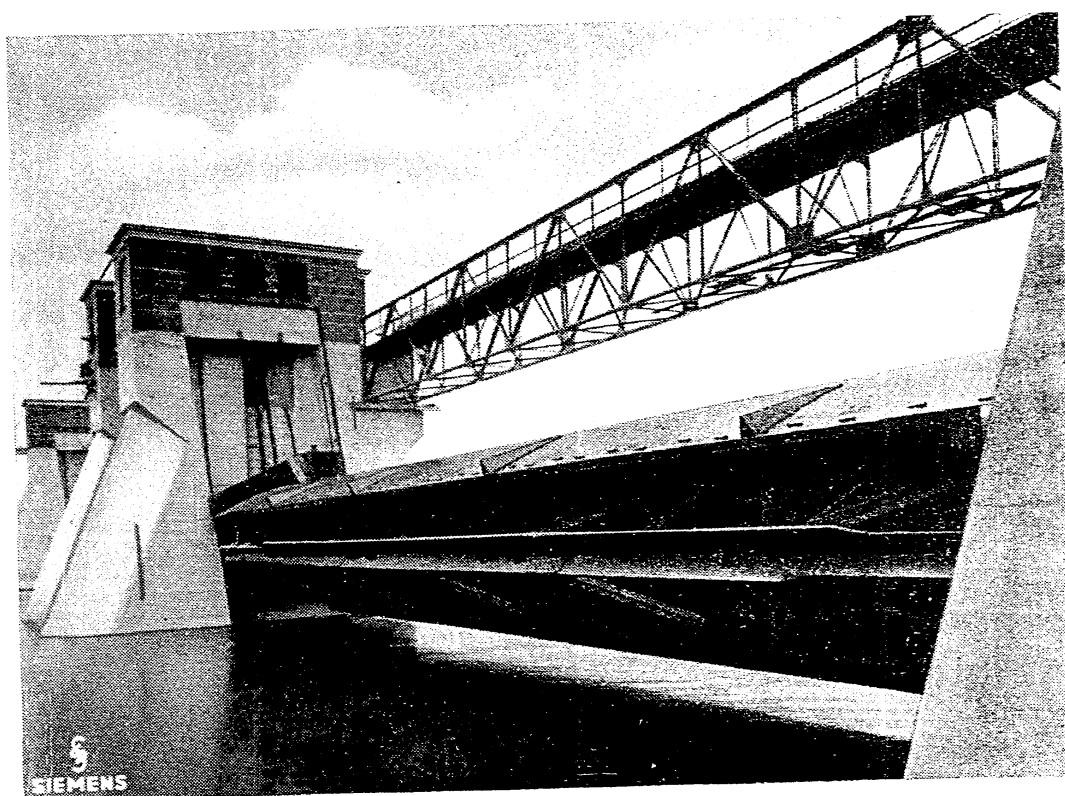


Abb. 8. Boberk
 Layout

KROSNO DAM, Poland. Source: Elektrotechnische Zeitschrift, Berlin, 1936, p. 703



KROSNO DAM, Poland. Dam Gate. Source:
Siemens Zeitschrift, Berlin, 1938.
p. 527